

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number
WO 2004/023228 A1

- (51) International Patent Classification⁷: **G05B 19/418**
- (21) International Application Number: **PCT/GB2003/003918**
- (22) International Filing Date: **9 September 2003 (09.09.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data: **0220899.9 9 September 2002 (09.09.2002) GB**
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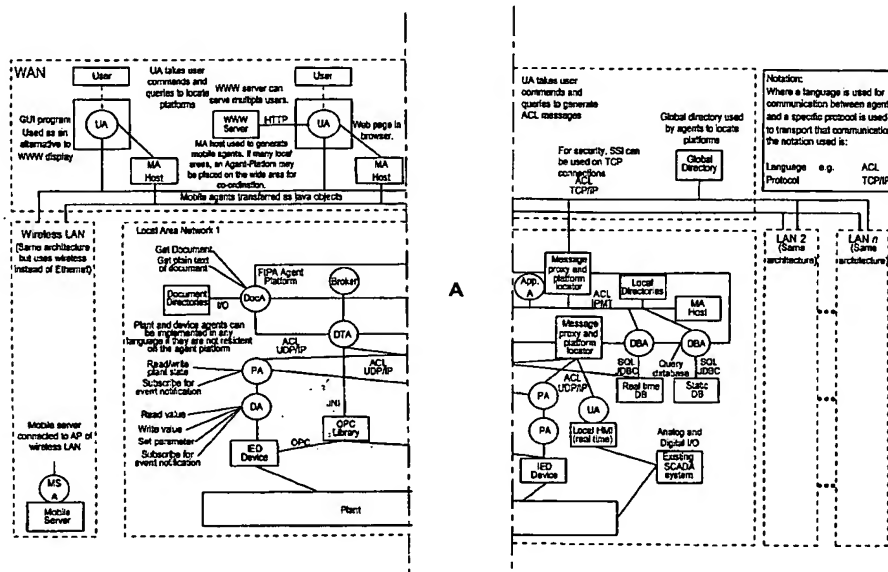
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- (81) **Designated States (*national*):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) **Designated States (*regional*):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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- (54) Title:** AUTOMATION PLATFORM FOR INFORMATION MANAGEMENT, CONDITION MONITORING AND REAL-TIME CONTROL OF DISTRIBUTED INDUSTRIAL SYSTEMS



- (57) **Abstract:** The present invention provides a generic system architecture for use in forming automation systems comprising a plurality of software agents selectively adaptable to implement specific functions used for the integration of information management, condition monitoring and real-time control in an automation system for a distributed industrial system formed thereby. The invention also provides automation systems comprising a plurality of software agents adapted to implement specific functions used for information management, condition monitoring and real-time control in a coordinated manner.

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— with amended claims

Date of publication of the amended claims: 10 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

AMENDED CLAIMS

[(received by the International Bureau on 13 April 2004 (13.04.04);
original claims 1-17 replaced by new claims 1-18 (3 pages)]

1. A generic system architecture for use in forming automation systems, the generic system comprising a plurality of software agents selectively adaptable to implement specific functions used for the integration of information management, condition monitoring and real-time control in an automation system for a distributed industrial system formed thereby.
2. An architectural system as claimed in claim 1, which comprises a plurality of different types of software agents.
3. An architectural system as claimed in claim 2 which contains an ontology agent used to update and manage an ontology database.
4. An architectural system as claimed in claim 2 or 3, wherein at least some of the agents in the system are controlled and managed by agent platforms and local directories.
5. An architecture system as claimed in claim 2, 3 or 4, wherein said different types of agent include any of Information Retrieval Agents and Database Agents, and any of Device Agents and Plant Agents/Control Agents.
6. An architectural system as claimed in claim 1, 2, 3, 4 or 5, which includes one or more mobile agents.
7. An architectural system as claimed in claim 6, in which said mobile agent or agents each provide an additional communications mechanism between a user agent and one or more information providing agents.
8. An architectural system as claimed in any of claims 1 to 7 that has

an open standard architecture and defined protocols and interfaces, allowing integration of a variety of software and hardware.

9. An architectural system as claimed in any of claims 1 to 8, having system components which can be reconfigured dynamically.

10. A architectural system as claimed in any of claims 1 to 9 that has comprehensive HMIs and Web browser and provides real-time operator intervention.

11. An architectural system as claimed in any of claims 1 to 10 that allows connections of mobile servers.

12. An architectural system as claimed in any of claims 1 to 11 adapted to embed user applications of information management, condition monitoring and real-time control flexibly.

13. An architectural system as claimed in any of claims 1 to 11, adapted to enable the adding of intelligent behaviour using different agent models.

14. An architectural system as claimed in any of claims 1 to 13 adapted to provide an integration of information management, condition monitoring and real-time control functions for various devices distributed over LANs and WAN.

15. An architectural system as claimed in any of claims 1 to 14, adapted to handle different types of tasks in different time scales required for the information management, condition monitoring and real-time control of large scale distributed industrial systems.

16. An architectural system as claimed in any of claims 1 to 15,

adapted to enable the use of commercial real-time application platforms as HMIs.

17. An automation system formed using a generic architectural system as claimed in any of claims 1 to 16.

18. An automation system for a distributed industrial system, comprising a plurality of software agents adapted to implement specific functions used for information management, condition monitoring and real-time control in a co-ordinated manner.